WHAT IS CLAIMED IS:

1. A clamp for holding and transporting an electrophoresis gel slab, said clamp comprising:

a first jaw having an operating end and a gripping end; and

a second jaw coupled to and being movable with respect to said first jaw, said first jaw having an operating end and gripping end, said gripping ends of said first and second jaws having a longitudinal dimension to grip and suspending a gel slab without damaging the gel slab, and said gripping end of said second jaw being biased toward said gripping end of said first jaw for gripping a gel slab.

2. The clamp of claim 1, wherein said clamp comprises at least one magnet for biasing said gripping ends of said first and second jaws together.

3. The clamp of claim 1, wherein said gripping end of said first jaw includes a first magnet and said gripping end of said second jaw includes a second magnet for biasing said gripping ends together.

4. The clamp of claim 3, wherein said first and second magnets are magnetic plastic strips.

5. The clamp of claim 1, wherein said second jaw is pivotable with respect to said first jaw to open and close said gripping ends of said jaws.

6. The clamp of claim 5, wherein said first jaw includes a fulcrum for pivoting said second jaw with respect to said first jaw.

7. The clamp of claim 6, wherein said fulcrum is positioned between said gripping end and said operating end of said first jaw and extends substantially parallel to said gripping end.

8. The clamp of claim 1, wherein said gripping ends of said first and second jaws have a slip resistant surface for gripping said gel slab.

9. The clamp of claim 1, wherein said first jaw has a height defined by a distance between said operating end and said gripping end, and said second jaw has a height defined by a distance between said operating end and gripping end, and wherein said height of said first jaw is greater than said height of said second jaw.

10. The clamp of claim 1, wherein said operating end of said first jaw includes at least one opening dimensioned to receive a carrier assembly for manipulating said clamp.

11. The clamp of claim 1, wherein said operating end of said first jaw has a longitudinal length greater than a longitudinal length of said second jaw.

12. The clamp of claim 11, wherein said operating end of said first jaw has a shoulder at opposite ends, each said shoulder being dimensioned for engaging a support to suspend a gel in a substantially vertical direction.

13. The clamp of claim 1, wherein said first and second jaws are formed from a substantially planar sheet material.

14. The clamp of claim 13, wherein said sheet material is selected from the group consisting of metal, glass and plastic.

15. The clamp of claim 1, wherein said clamp further comprises a hinge coupled to said first and second jaws, wherein said second jaw is pivotable with respect to said first jaw.

16. The clamp of claim 1, wherein said gripping end of said first and second jaws include a resilient cushion member.

17. The clamp of claim 15, wherein said resilient cushion member has a slip-resistant surface.

18. The clamp of claim 17, wherein said cushion member is a resilient polymeric foam.

19. The clamp of claim 1, wherein said gripping ends of said first and second jaws include a plurality of particles forming a textured gripping surface.

20. A method of manipulating an electrophoresis gel slab, said method comprising the steps of:

providing a clamp having a first jaw with an operating end and a gripping end, and a second jaw with an operating end and a gripping end, said gripping ends being biased toward each other;

providing a gel slab having a length, a width and a side edge;

positioning said side edge between said gripping ends of said jaws and biasing said gripping ends toward said gel slab with sufficient pressure to grip said gel slab; and

lifting said clamp and vertically suspending said gel slab, said gripping ends of said jaws being biased together under sufficient force to grip said side edge of said gel slab substantially without tearing said gel slab.

21. The method of claim 20, comprising the step of moving said carrier to a position above a gel staining tank containing a staining liquid, and lowering said gel slab into said staining liquid for sufficient time to stain said gel.

22. The method of claim 20, wherein said first and second jaws of said clamp include a magnet for biasing said gripping ends together.

23. The method of claim 20, wherein said magnets are coupled to said gripping ends of said first and second jaws.

24. The method of claim 20, wherein said second jaw pivots about an axis between an open position and a gripping position, said method comprising retaining said second jaw in said open position while positioning said side edge of said gel slab between said gripping ends, and thereafter releasing said second jaw to grip said gel slab.

25. An automated apparatus for manipulating an electrophoresis gel slab, said apparatus comprising

a robotic arm, said robotic arm being movable in a first substantially horizontal direction, a second substantially horizontal direction and a vertical direction between a plurality of work stations;

a carrier assembly coupled to said robotic arm, said carrier assembly having at least one coupling arm for removably coupling to an electrophoresis gel slab and being movable between a coupling position and an uncoupling position; and

a microprocessor operatively coupled to said robotic arm and said carrier assembly for manipulating a gel slab between said work stations.

26. The apparatus of claim 25, further comprising:

a substantially linear guide support extending between said work stations;

a vertical support coupled to said linear guide support and being movable along a longitudinal length of said linear guide support in said first direction; and

a boom having a longitudinal dimension coupled to said vertical support, wherein said carrier assembly is coupled to said boom and movable along said longitudinal dimension of said boom in said second direction.

27. The apparatus of claim 26, wherein said boom has a first end coupled to said vertical support and a second end spaced outwardly from said vertical support, and wherein said boom is movable in said substantially vertical direction along said vertical support.

28. The apparatus of claim 25, further comprising:

a storage vessel dimensioned for storing a plurality of said electrophoresis gel slabs; and

at least one treatment tank for treating said gel slab, wherein said robotic arm and carrier assembly moves said gel slab between said storage vessel and said treatment tank.

29. The apparatus of claim 28, comprising a plurality of said treatment tanks, and wherein said robotic arm and carrier assembly are able to move said gel slabs sequentially to each of said treatment tanks.

30. The apparatus of claim 28, wherein said treatment tank has first and second side walls and end walls extending between said side walls to define a cavity for containing a treating liquid.

31. The apparatus of claim 30, wherein at least one of said side walls has an inner surface to inhibit said electrophoresis gel slab from adhering to said side wall.

32. The apparatus of claim 31, wherein said inner surface of said at least one side wall has a plurality of outwardly extending projections to limit contact of said gel slab with said side wall.

33. The apparatus of claim 32, wherein said projections are spaced apart a distance to define a liquid channel between adjacent projections.

34. The apparatus of claim 32, wherein said projections have a substantially pyramid shape.

35. The apparatus of claim 32, wherein said projections have an apex spaced from said side wall, said apex having a surface area to limit contact of said gel slab with said side wall.

36. The apparatus of claim 32, wherein said projections are arranged in a substantially uniform array.

37. The apparatus of claim 30, further comprising an agitator for agitating said treating liquid.

38. The apparatus of claim 37, wherein said agitator comprises a plate vertically disposed in said treating liquid and an operating assembly for reciprocating said plate in a direction toward said second side wall.

39. The apparatus of claim 38, wherein said agitator comprises a pair of operating arms pivotally coupled to opposite side edges of said plate, and wherein said operating arms are operatively coupled to said operating assembly.

40. The apparatus of claim 39, wherein each of said operating arms have an upper end pivotally coupled to a fixed support, and a lower end coupled to said plate.

41. The apparatus of claim 28, wherein said treatment tank comprises a gel agitator for agitating said electrophoresis gel in a treating liquid contained in said treatment tank.

42. The apparatus of claim 41, wherein said gel agitator reciprocates said gel slab in a substantially vertical direction.

43. The apparatus of claim 42, wherein said gel agitator comprises a frame for suspending said gel slab in said treating liquid, and wherein said apparatus further comprises a drive assembly for reciprocating said frame and suspended gel slab in said vertical direction.

44. The apparatus of claim 43, wherein said drive assembly comprises at least one arm having a first end pivotally coupled to said frame and a second end pivotally coupled to a fixed support.

45. The apparatus of claim 44, further comprising a drive assembly operatively coupled to said arm for pivoting said arm about said fixed support.

46. The apparatus of claim 45, wherein said arm includes a leg extending from said second end, and wherein said drive assembly is operatively coupled to said leg for pivoting said arm about said fixed support.

47. The apparatus of claim 46, wherein said drive assembly comprises a motor having a crank member and a connecting member operatively connecting said crank member to said leg of said arm.

48. The apparatus of claim 46, wherein said drive assembly comprises a motor having a cam member, said cam member being operatively connected to said leg.

49. A tank assembly for treating an electrophoresis gel with a treating liquid, said tank assembly comprising:

a treatment tank having a side wall and being dimensioned to contain a liquid bath;

an agitator, said agitator including a movable agitator member positioned in said tank and being movable toward said side wall; and

a drive member coupled to said agitator for moving said agitator and agitating the liquid contained in said tank.

50. The assembly of claim 49, wherein said agitator member reciprocates along a plane substantially perpendicular to said side wall to agitate said liquid.

51. The assembly of claim 49, wherein said agitator member is a planar member having a dimension complementing a dimension of the electrophoresis gel.

52. The assembly of claim 49, wherein said agitator member is a plate having a dimension complementing a dimension of said side wall, and wherein said plate is oriented substantially perpendicular to said side wall.

53. The assembly of claim 52, wherein said side wall is substantially vertical.

54. The assembly of claim 52, wherein said plate moves in a substantially horizontal direction with respect to said side wall.

55. The assembly of claim 49, wherein said agitator member has a top edge, a bottom edge and opposite side edges, and wherein said agitator includes a pair of arms coupled to said drive member and to each of said opposite side edges.

56. The assembly of claim 55, wherein said arms are pivotally coupled to said side edges of said agitator member.

57. The assembly of claim 56, wherein said arms are pivotally coupled to a middle portion of said side edges of said agitator member.

58. The assembly of claim 56, wherein said arms have a top end and a bottom end, said top end of said arms being pivotally coupled to a support, and said bottom end being pivotally coupled to said side edges of said agitator member.

59. The assembly of claim 58, wherein said support is a fixed support and said arms pivot about a pivot axis with respect to said fixed support.

60. The assembly of claim 59, further comprising a leg extending from said top end of said arm, and wherein said drive

member is operatively connected to said leg to pivot said arm with respect to said support.

61. The assembly of claim 52, wherein said agitator is movable toward said side wall to position the electrophoresis gel against said side wall for a predetermined period of time.

62. The assembly of claim 61, wherein said side wall is transparent and said assembly includes an imaging device for recording an image of the electrophoresis gel through said side wall when said gel is pressed against said side wall.

63. The assembly of claim 62, further comprising a computer controlled automated robotic arm for transferring an electrophoresis gel to said tank.

64. The assembly of claim 63, further comprising at least one staining tank for staining said electrophoresis gel and a rinse tank for rinsing said electrophoresis gel, wherein said automatic robotic arm is programmed to move said electrophoresis gel between said staining tank and said rinse tank, and between said rinse tank and said treatment tank.

65. The assembly of claim 64, wherein said robotic arm is programmed to move said electrophoresis gel from said treatment tank to said staining tank.

66. A treatment container for treating an electrophoresis gel, said container comprising:

a side wall having an inner face and an outer face, said inner face having a plurality of spaced-apart projections extending inwardly toward an interior region of said container, said projections being spaced apart a distance to define a recess between adjacent projections, said projections having an outer face with a surface area sufficient to support a gel slab and to prevent said gel slab from adhering to said side wall when said container contains a liquid.

67. The container of claim 66, wherein said container comprises two opposing side walls defining said interior region of said container, each of said side walls having projections extending inwardly with respect to said container and being dimensioned to prevent said gel slab from adhering to said side walls.

68. The container of claim 66, wherein said recesses between said projections have a dimension to enable a volume of liquid to flow between said projections sufficient to prevent said gel slab from adhering to said side walls.

69. The container of claim 66, wherein said projections are arranged in a substantially uniform array.

70. The container of claim 69, wherein said projections have a substantially pyramid shape.

71. A method of staining an electrophoresis gel in a staining assembly, comprising the steps of:

providing a holding tank for holding a plurality of electrophoresis gels;

providing at least one staining tank for staining said electrophoresis gels;

providing a computer controlled robotic assembly for manipulating said electrophoresis gels;

sequentially transferring said electrophoresis gels to said at least one staining tank for a time sufficient to stain said electrophoresis gels; and

transferring said electrophoresis gels from said at least one staining tank to said holding tank.

72. The method of claim 71, wherein said staining assembly comprises a plurality of staining tanks containing a reagent, and wherein said method comprises sequentially transferring said electrophoresis gels through said staining tanks.

73. The method of claim 72, wherein said staining assembly comprises an imaging tank having an imaging device, and wherein said method further comprises transferring said electrophoresis gels from said staining tanks to said imaging tank and capturing an image of said electrophoresis gel.

74. The method of claim 73, wherein said staining assembly further comprises at least one rinse tank, and said method comprises the step of transferring said electrophoresis gels from said staining tanks to said rinse tank for a time sufficient to rinse reagents from said electrophoresis gel and thereafter transferring said electrophoresis gel to said imaging tank.

75. The method of claim 74, comprising the step of transferring said electrophoresis gel from said imaging tank to a respective staining tank after capturing said image.

76. The method of claim 74, wherein said imaging tank includes a transparent side wall and an agitator, said method comprising moving said agitator to press said electrophoresis gel against said transparent side wall and thereafter capturing said image.